202401UECM3473OE2b

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Review of preview

Started on	Monday, 26 February 2024, 03:47 PM
Completed on	Monday, 26 February 2024, 03:48 PM
Time taken	10 secs
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

An insurance company is determining limited fluctuation credibility standards for its automobile losses. You are given the following information:

- The company selects all of its credibility standards to be the number of claims at which there is a 99% probability that the observed amount is within 6% of the mean.
- The standard for full credibility for aggregate loss is 11,226 claims.
- claim frequency follows a Poisson distribution.
- Claim frequency and claim severity are independent.

Calculate the limited-fluctuation credibility standard for claim severity. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 9382.728889
Marks for this submission: 0/1.

2
Marks: 1

Aggregate claims per period have a compound Poisson distribution.
You have determined that the number of claims for full credibility is 3,900 claims.
It is then discovered that an incorrect value of the coefficient of variation for the severity distribution was used to determine the full credibility standard.
The original coefficient of variation used was 0.5257, but the corrected coefficient of variation is 0.9093. Find the corrected number of claims for full credibility. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 5581.983591
Marks for this submission: 0/1.

3
Marks: 1

An insurance coverage involves credibility based on number of claims only. A full credibility standard is determined so that the number of claims is within 5% of the expected 98% of the times. For a particular group, 720 claims have been observed. Determine an appropriate credibility factor, assuming that the number of claims is Poisson distributed. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 0.5768
Marks for this submission: 0/1.

4
Marks: 1

The average claim size for a group of insureds is 2,300 with standard deviation 7,700. Claim count follows a Poisson distribution. The standard for full credibility is that the total loss should be within 9% of the expected total loss with probability 99%. We observe 5,200 claims and a total loss of 1,630,000 for a group of insureds. If our prior estimate of the total loss is 1,660,000, determine the limited fluctuation credibility estimate of the total loss for the group of insureds. _____

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 1638367
Marks for this submission: 0/1.

5 Marks: 1

You are given:

- Claim counts follow a Negative Binomial distribution with parameters r= 6 and β = 0.44.
- Claim sizes follow a lognormal distribution with coefficient variation 4.0.
- Claim sizes and claim counts are independent.
- The number of claims in the first year was 1,100.
- The aggregate loss in the first year was 7,830,000.
- The manual premium for the first year was 4,250,000.
- The exposure in the second year is identical to the exposure in the first year.
- The full credibility standard is to be within 5.70% of the expected aggregate loss 95% of the time.

Determine the limited fluctuation credibility net premium for the second year. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 5076980
Marks for this submission: 0/1.

6 Marks: 1

Claim frequency follows a Poisson distribution. The coefficient of variation for claim severity is 3.4. The methods of limited fluctuation credibility are used, with a standard of aggregate losses being within 7% of expected losses 95% of the time. Determine the number of expected claims needed for 9.338% credibility. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 85.86446
Marks for this submission: 0/1.

7 Marks: 1

You are given:

- Number of claims follows a Binomial distribution with parameters m and q = 0.7.
- The standard for full credibility is set so that the actual aggregate are within 9.70% of expected losses 95% of the time.
- 2850 expected claims are required for 53% credibility.

_____

Answer:

Make comment or override grade

Incorrect
Correct answer: 4.9548
Marks for this submission: 0/1.

8 Marks: 1

You are given:

- The losses W_j, j = 1,..., 1900, are available for a particular policyholder.
- It is reasonable to assume that the W_j's are independent and compound Negative Binomial distributed with parameters r = 10 and β.
- β varies and follows a gamma distribution with parameters α = 3 and θ = 2.
- Claim sizes(X) follow a distribution with probability density function(p.d.f.)
$$f(x|\mu) = 1/\mu\ e^{-x/\mu}.$$
- μ varies and follows a distribution with p.d.f
$$f(\mu) = [1200^5]/[\Gamma(5)]\mu^{-6}e^{-1200/\mu}.$$
- Claim sizes and claim frequency are independent.
- The full credibility standard is to be within 3% of the expected aggregate losses 95% of the time.

Determine the credibility factor. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.93322
Marks for this submission: 0/1.

9 Marks: 1

For an insurance portfolio, you are given the following:

- The number of claims for each insured follows follows a Poisson distribution.
- The mean claim count for each insured varies. The distribution of mean claim counts is a gamma distribution with $\alpha_1 = 0.5$ and $\theta_1 = 4$.
- The size of claims for each insured follows an Exponential distribution.
- The mean of the size of claims varies. The distribution of the mean of the size of the claim is an inverse gamma with parameters $\alpha_2 = 3$ and $\theta_2 = 4000$.
- The credibility standard is that the aggregate claims must be with 5% of the expected P% of the time.
- 3308 claims were observed and 50% credibility was assigned to this experince.

Determine P. _____

Answer:

Make comment or override grade

Incorrect

Correct answer: 95.764346
Marks for this submission: 0/1.

10
Marks: 1

An insurance portfolio has two types of risk, A and B. 50% of the insureds are of type A and 50% are of type B. You are given:

	Number of claims		Size of claims	
		Standard		Standard
Type	Mean	deviation	Mean	deviation
A	0.11	0.15	3	4
B	0.25	0.11	8	6

Given the type of risk, number of claims and size of claims are independent. The methods of limited fluctuation credibility are used, with a standard for full credibility of expected aggregate claims being within 6% of actual aggregate claims 95% of the time. Calculate the credibility given to 552 claims. _____

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.7708
Marks for this submission: 0/1.